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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,322	12/04/2003	Kenzo Matsumoto	JCLA12520	1383
7590	08/24/2004		EXAMINER	
J.C. Patents Suite 250 4 Venture Irvine, CA 92618				LEUNG, RICHARD L
		ART UNIT	PAPER NUMBER	3744

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/729,322	MATSUMOTO ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Richard L. Leung	3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 04 December 2003.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 2 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1 and 2 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 04 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: Refrigerating Device Using A Refrigerant Containing Carbon Dioxide.
2. The disclosure is objected to because of the following informalities: the recitation of "carbon oxide" on page 2, line 17 of the specification is understood to be --carbon dioxide--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the term, "combustible nature refrigerant." There is no clear definition of this term in the applicant's disclosure, and the term does not appear to be one commonly understood in the art. As such, the claims are rendered indefinite. Clarification of the term is needed to overcome this rejection. For the remainder of this action, the term "combustible nature refrigerant" will be treated as comprising hydrocarbon refrigerants, as best understood from the specification.

### ***Claim Rejections - 35 USC § 102***

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6117356 (Powell et al.). Powell et al. disclose a refrigeration device comprising a compressor, a gas cooler (condenser), an expansion mechanism (expansion valve), and an evaporator. See column 2, lines 24-27. It is inherent that these components are sequentially connected using refrigerant pipes. The refrigeration device, it is disclosed, uses a refrigerant mixture that may contain carbon dioxide at 1-30% by weight (see column 3), and therefore is understood to overlap the range 20-50 mass % set forth by the claim. The refrigerant mixture may also include a combustible nature refrigerant, a hydrocarbon such as butane and pentane (column 4, lines 35-43).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6117356 (Powell et al.) in view of "Guidelines for the use of

Hydrocarbon Refrigerants in Static Refrigeration and Air Conditioning Systems," (hereinafter ACRIB). Powell et al. disclose a refrigeration device comprising a compressor, a gas cooler (condenser), an expansion mechanism (expansion valve), and an evaporator. See column 2, lines 24-27. It is inherent that these components are sequentially connected using refrigerant pipes. The refrigeration device, it is disclosed, uses a refrigerant mixture that may contain carbon dioxide (see column 3). The refrigerant mixture may also include a combustible nature refrigerant, a hydrocarbon such as butane and pentane (column 4, lines 35-43). Powell et al. fail to disclose that the maximum fill amount of the combustible nature refrigerant is 150g. ACRIB (which stands for Air Conditioning and Refrigeration Industry Board) teaches that the recommended charge size of hydrocarbon refrigerants for use in systems installed in rooms of any size is 0.15kg (equivalent to 150g) or less (see Sections 2.1-2.2, particularly page 7). Therefore, it would have been obvious to one of ordinary skill to have had a maximum fill amount of 150g for the combustible nature refrigerant in the device disclosed by Powell et al. because ACRIB expressly teaches that such an amount is the acceptable safe charge level for combustible hydrocarbon refrigerants for use in rooms of any size.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 5736063 Richard et al. 04-07-1998: discloses a refrigerant composition containing carbon dioxide and combustible hydrocarbon refrigerant.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard L. Leung whose telephone number is 703-306-4154. The examiner can normally be reached on Mon-Fri.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise L. Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard L. Leung  
Examiner  
Art Unit 3744

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DENISE L. ESQUIVEL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700